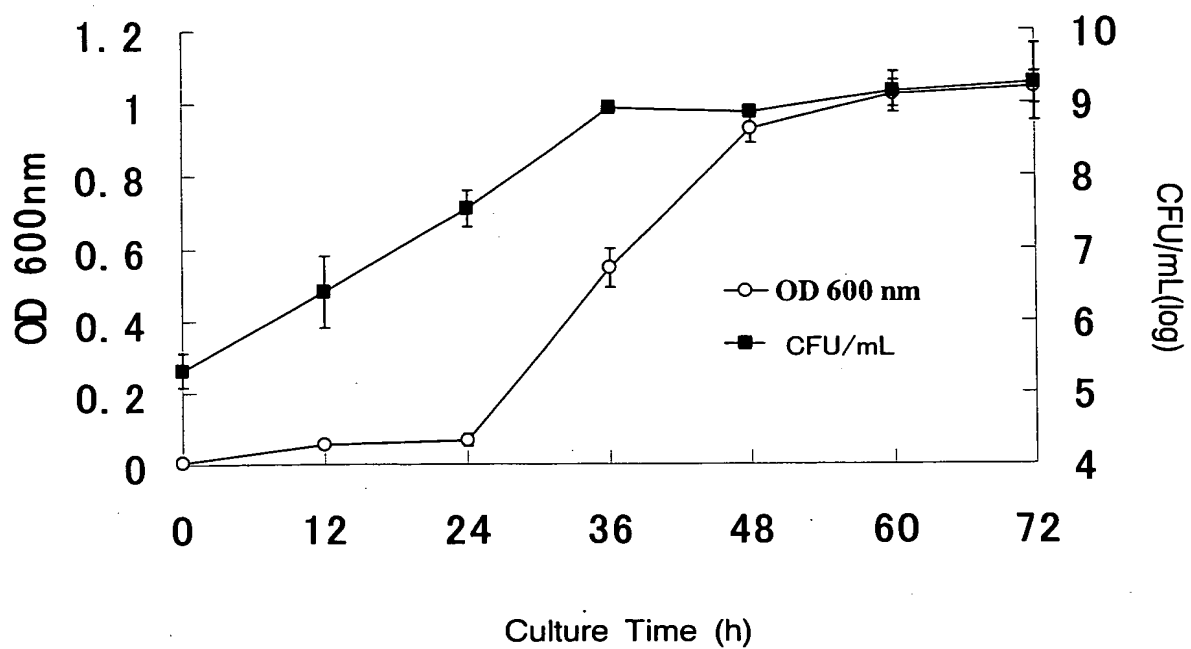


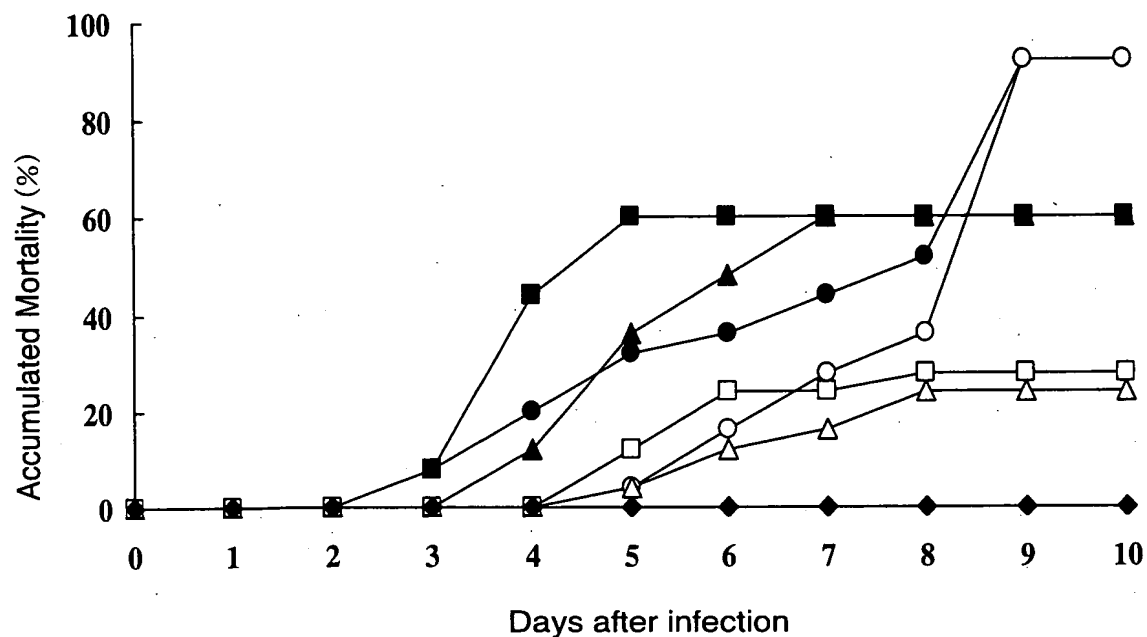


Fig. 1



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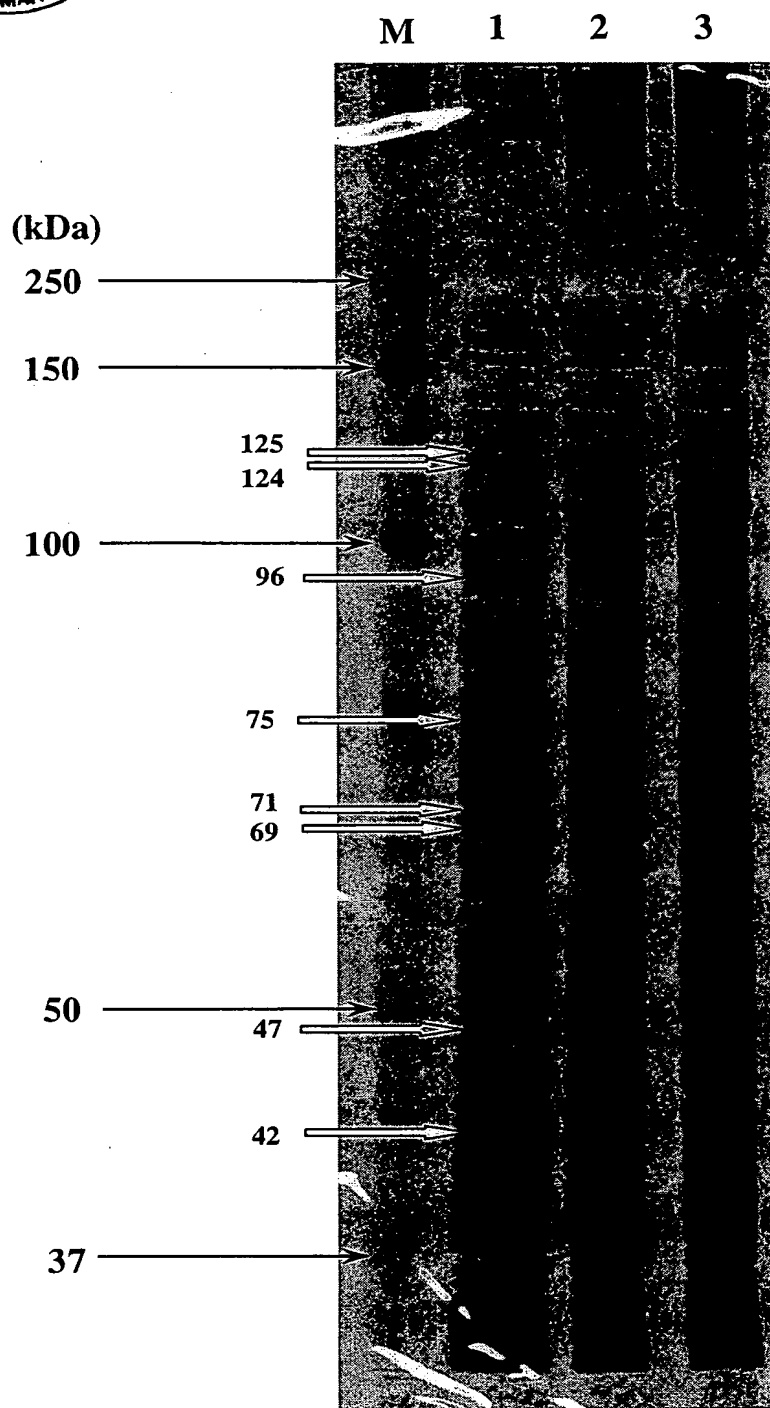
Fig. 2



- : Logarithmic growth phase (36 h,  $10^{9.5}$  UFC/ml)
- : Logarithmic growth phase (36 h,  $10^{8.5}$  UFC/ml)
- ▲ : Stationary phase (48 h,  $10^{9.9}$  UFC/ml)
- △ : Stationary phase (48 h,  $10^{8.9}$  UFC/ml)
- : Stationary phase (72 h,  $10^{10.2}$  UFC/ml)
- : Stationary phase (72 h,  $10^9$  UFC/ml)
- ◆ : Control group (Non-infection group)



Fig. 3



M: Molecular weight marker

Lane 1: Logarithmic growth phase (36 h)

Lane 2: Stationary phase (48 h)

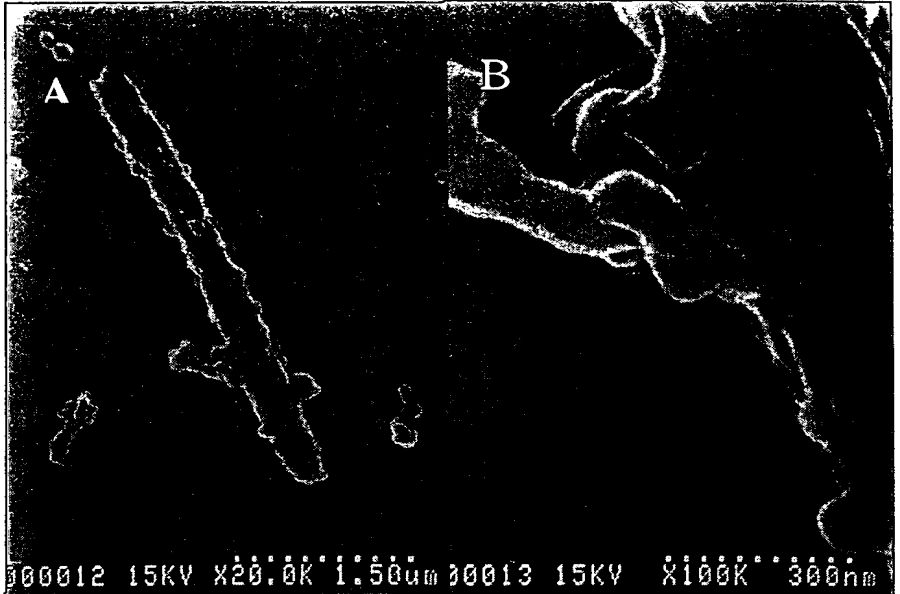
Lane 3: Stationary phase (72 h)

Arrow: Bands specific to logarithmic growth phase

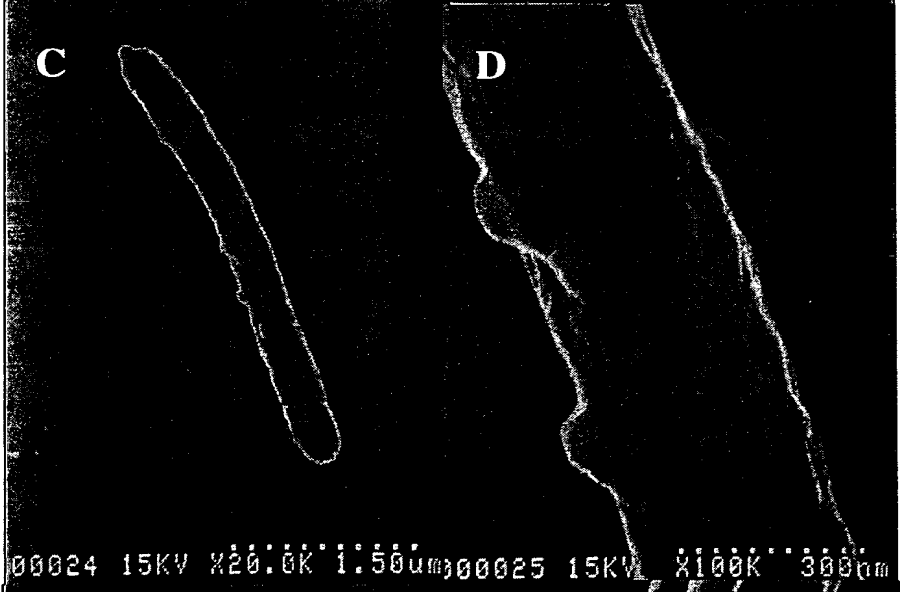


Fig. 4

Logarithmic growth  
phase (36 h)



Stationary phase  
(48 h)



Stationary phase  
(72 h)

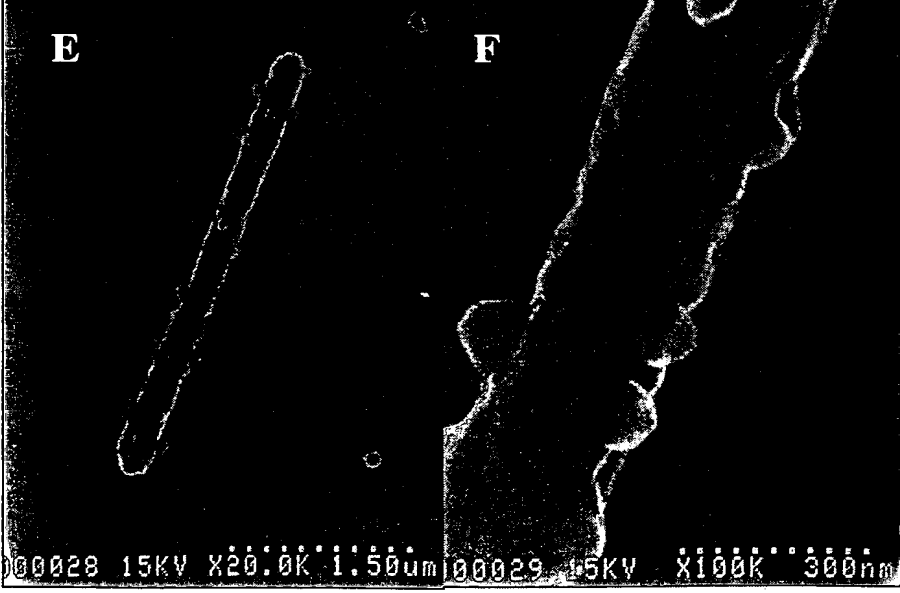
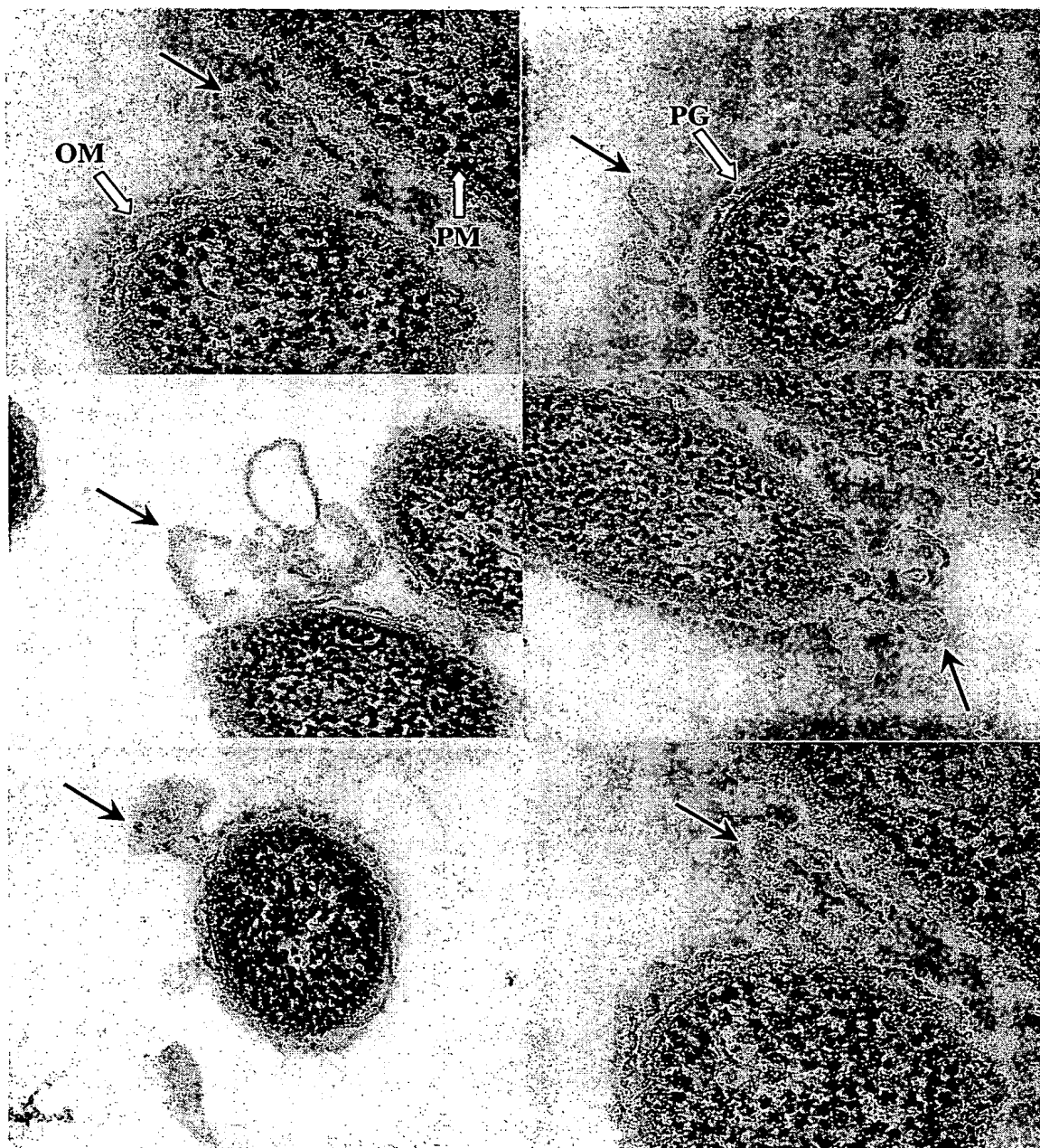


Fig. 5



OM: Outer membrane

PG: Peptidoglycan membrane

PX: Plasma membrane

Arrow: Projections on the cell surface



Fig. 6

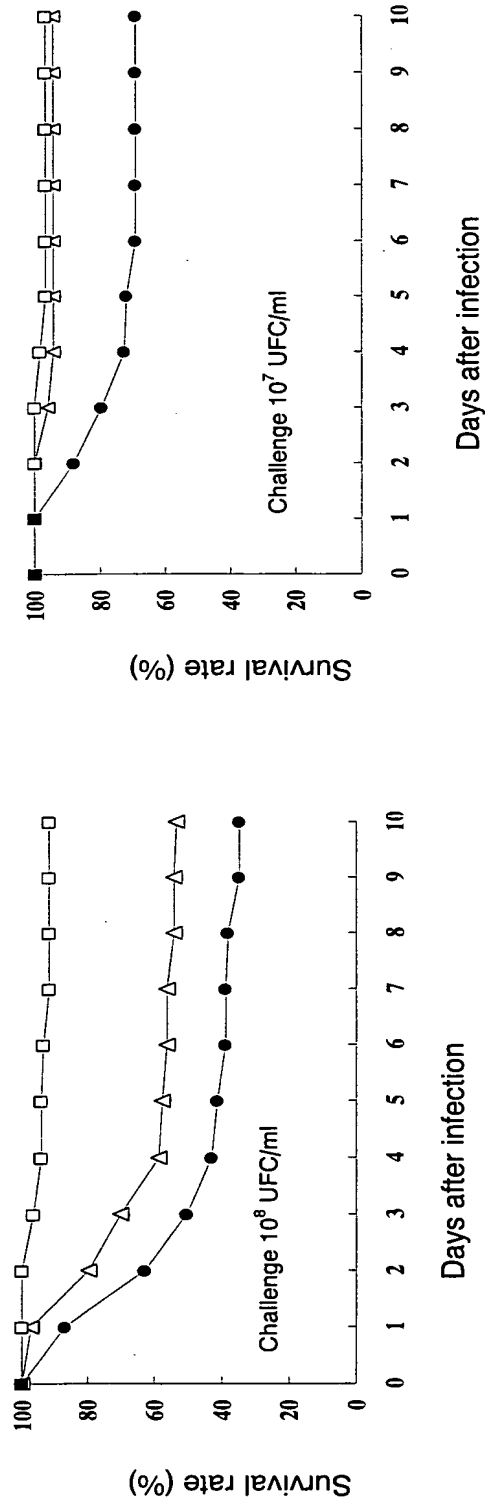


A = Magnification  $\times 2.500$

B = Magnification  $\times 20.000$

Fig. 7

Challenge 1 (3 days after vaccine administration)



- △ : Everyday administration
- : 5 days' administration in 2 weeks
- : Control group



Fig. 8

Challenge 2 (7 weeks after vaccine administration)

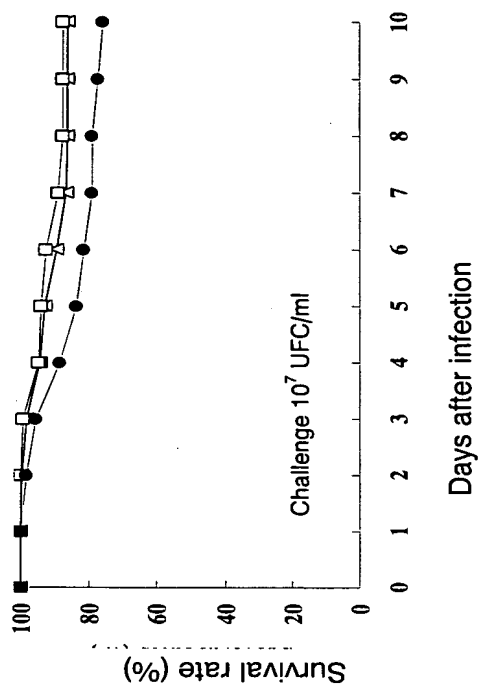
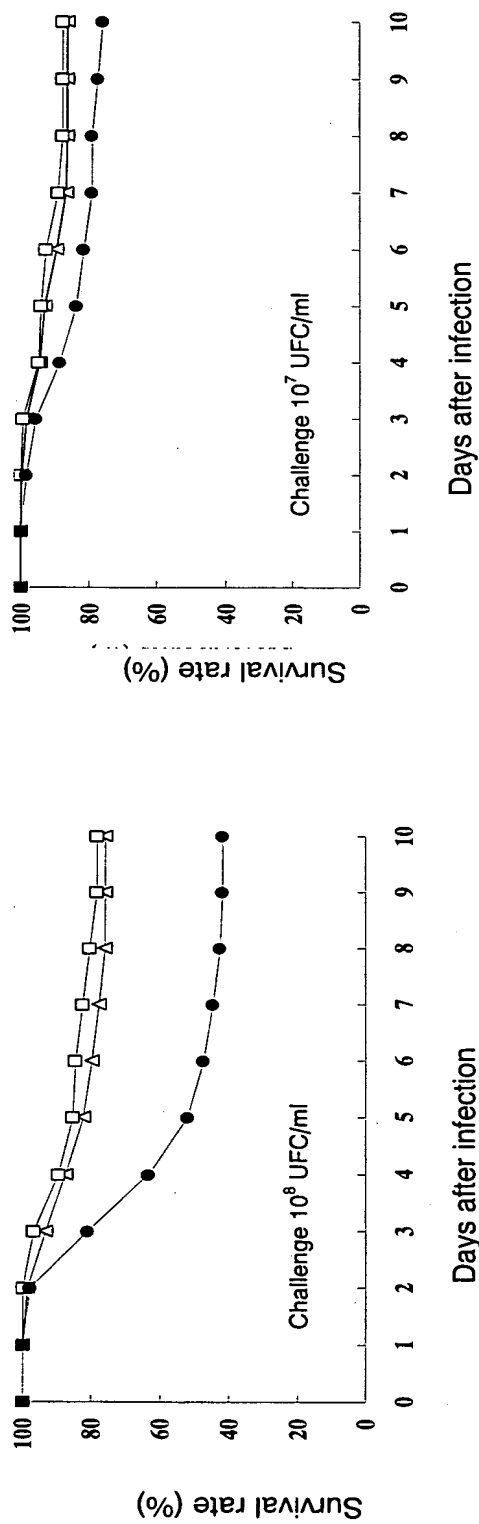
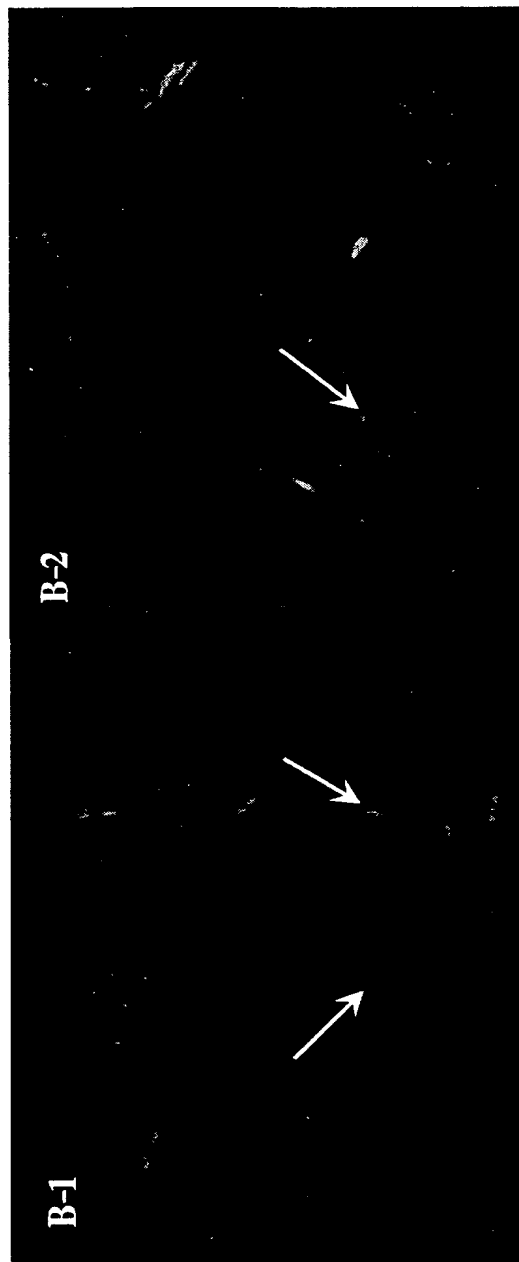




Fig. 9



Fig. 10



× 1,000

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